AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions:

1. (Currently Amended) An apparatus comprising:

a voltage regulator having an output path to ~~couple~~ supply a voltage to power a load, a power consumption rate of the load to fluctuate during operation;

a first sense point to sense a first feedback signal ~~for the voltage regulator~~ at a first sense location on the output path; and

a second sense point to sense a second feedback signal ~~for the voltage regulator~~ at a second sense location on the output path, said first and second feedback signals to at least partially represent fluctuations in the power consumption rate, and said voltage regulator to adjust the voltage based at least in part on the first and second feedback signals.

2. (Previously Presented) The apparatus of claim 1 further comprising:

a motherboard to which the voltage regulator is coupled; and

a socket to couple the load to the motherboard.

3. (Previously Presented) The apparatus of claim 2 further comprising:

the load;

wherein the first sense location is on the mother board; and

wherein the second sense location is on the load.

4. (Previously Presented) The apparatus of claim 1 wherein the load comprises a processor die.

5. (Previously Presented) The apparatus of claim 1 wherein the voltage regulator comprises:

a board-sense circuit to receive the first feedback signal; and

a load-sense circuit to receive the second feedback signal.

6. (Previously Presented) The apparatus of claim 5 wherein the board-sense circuit comprises:

a transient filter to filter signal transients in the first feedback signal.

7. (Previously Presented) The apparatus of claim 5 wherein the load-sense circuit comprises:

a passive filter to capture signal transients in the second feedback signal.

8. (Previously Presented) The apparatus of claim 5 wherein the load-sense circuit comprises:

a capacitive element; and

a resistive element in parallel with the capacitive element.

9. (Previously Presented) The apparatus of claim 5 wherein the load-sense circuit comprises:

an active filter to amplify signal transients in the second feedback signal.

10. (Previously Presented) The apparatus of claim 5 wherein the load-sense circuit comprises:

an amplifier; and

a passive filter.

11. (Previously Presented) The apparatus of claim 10 wherein:

the second sense location comprises a differential pair; and

the amplifier comprises:

a first resistive element coupled between a first line of the differential pair and a first node;

a second resistive element coupled between a ground node and the first node;

a third resistive element coupled between a second line of the differential pair and a second node;

a differential amplifier having a first input coupled to the first node, a second input coupled to the second node, and an output coupled to a third node; and

a fourth resistive element coupled between the second node and the third node, said third node coupled to the passive filter.

12. (Previously Presented) The apparatus of claim 1 wherein:

the second sense location comprises a differential pair; and

the second sense location comprises differential sense points across the load.

13. (Previously Presented) The apparatus of claim 12 wherein the second sense location comprises:

a first sense pin for a source voltage at the load; and

a second sense pin for a source ground at the load.

14. (Previously Presented) The apparatus of claim 1 wherein the second sense location comprises a sense pin on the load.

15. (Currently Amended) An apparatus comprising:

a first input circuit to provide a steady-state feedback from a first sense location in an output path, said first sense location being on a motherboard;

a second input circuit to provide a transient response feedback from a second sense location in the output path, said second sense location being on a load that is electrically coupled to the motherboard; and

a voltage regulator to regulate a voltage on the output path to power the load based at least in part on the steady-state feedback and the transient response feedback, said steady-state feedback and said transient response

feedback to at least partially represent fluctuations in a power consumption rate of the load during operation.

16. (Previously Presented) The apparatus of claim 15 wherein the second input circuit comprises a passive, high-pass filter.

17. (Previously Presented) The apparatus of claim 15 wherein the second input circuit comprises a capacitor in parallel with a resistor.

18. (Previously Presented) The apparatus of claim 15 wherein the second input circuit comprises an active, high-pass filter.

19. (Previously Presented) The apparatus of claim 15 wherein the second sense location comprises a differential pair of sense points on the load, and wherein the second input circuit comprises:

a differential amplifier having two inputs to couple with the differential pair of sense points.

20. (Previously Presented) The apparatus of claim 19 wherein the second input circuit further comprises:

a first input resistor to couple in series with a first one of the differential pair of sense points and a first input of the two inputs of the differential amplifier;

a second input resistor to couple in series with a second one of the differential pair of sense points and a second input of the two inputs of the differential amplifier;

a ground resistor to couple a ground to the first input of the differential amplifier; and

a feedback resistor to couple an output of the differential amplifier to the second input of the differential amplifier.

21. (Previously Presented) The apparatus of claim 20 wherein the second input circuit further comprises:

a passive, high-frequency filter coupled to the output of the differential amplifier.

22. (Previously Presented) The apparatus of claim 20 wherein the second input circuit further comprises:

a capacitor and a resistor coupled in parallel, said capacitor and said resistor coupled in series to the output of the differential amplifier.

23. (Previously Presented) The apparatus of claim 15 wherein the voltage regulator comprises:

an error amplifier;

a pulse-width modulator; and

a buck regulator.

24. (Currently Amended) A method comprises:

sensing a first feedback signal at a first sense location on an output path;

sensing a second feedback signal at a second sense location on the output path; and

regulating a voltage ~~for~~ to power a load on the output path based at least in part on the first feedback signal and the second feedback signal, said first and second feedback signals to at least partially represent fluctuations in a power consumption rate of the load during operation.

25. (Previously Presented) The method of claim 24 wherein the first sense location is on a motherboard and the second sense location is on the load, said load being coupled to the motherboard by a socket.

26. (Previously Presented) The method of claim 24 wherein sensing the first feedback signal comprises:

filtering signal transients out of the first feedback signal.

27. (Previously Presented) The method of claim 24 wherein sensing the second feedback signal comprises:

passively filtering the second feedback signal to capture signal transients.

28. (Previously Presented) The method of claim 24 wherein sensing the second feedback signal comprises:

actively filtering the second feedback signal to amplify signal transients.

29. (Currently Amended) A system comprising:

a motherboard;

a processor coupled to the motherboard; and

a voltage regulation circuit to provide a voltage signal ~~for~~ to power the processor, said voltage regulation circuit comprising

a first input circuit to provide a steady-state feedback from a first sense location in a voltage path for the voltage signal, said first sense location being on the motherboard;

a second input circuit to provide a transient response feedback from a second sense location in the voltage path, said second sense location being on the processor; and

a voltage regulator ~~circuit~~ to regulate the voltage signal based at least in part on the steady-state feedback and the transient response feedback, said steady-state feedback and said transient response feedback to at least partially represent fluctuations in a power consumption rate of the processor during operation.

30. (Previously Presented) The system of claim 29 wherein the second input circuit comprises a passive, high-pass filter.

31. (Previously Presented) The system of claim 29 wherein the second input circuit comprises a capacitor in parallel with a resistor.

32. (Previously Presented) The system of claim 29 wherein the second input circuit comprises an active, high-pass filter.

33. (Previously Presented) The system of claim 29 wherein the second sense location comprises a differential pair of sense points on the load, and wherein the second input circuit comprises:

a differential amplifier having two inputs to couple with the differential pair of sense points.